KEN KENTUCKY EDUCATION NETWORK
KENTUCKY EDUCATION CABINET

KEN Applications Subcommittee
Work Group on Online Testing & Assessment

Charge:
The Online Testing and Assessment group will review the issues surrounding development, delivery and analysis of online testing and assessment for the partners in the KEN network. The group will evaluate all of the likely participants, purposes and methods of online assessment. The group will identify legal issues surrounding the assessment process, privacy, security needs, and assess the preparation needed by each agency to participate, develop the primary goals of online assessment, and establish a basic timeline for the project.

Scope: Discussions will include web-based testing, assessment systems and software limited to applications that will run on the KEN network.

Timeline: July 18, 2007 – Mid-project progress report to the KEN Applications Subcommittee
September 1, 2007 - Recommendations due to the Subcommittee

Work Group Members:

CPE	Charles McGrew*	Sherri Noxel
Education	Joe Morgan *	Keith Parsons
EPSB	Chela Kaplan	Jamie Rice
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KDE	Pam Moore (Career and Technical)	Donna Eustace* (OTL)
KDE	Roger Ervin (OAA)	Kevin Hill (OAA)
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K12 School	Bob Rodosky (JCPS)	
Legal	Jeff Mosley	
School for the Deaf	Clyde Mohan	
Universities	Deb Moore (UK)	Dan Mahoney (UofL)

Where We Are in the Use of This Application:

1. Students take several industry assessments online: CompTIA A+, Cisco CCNA, NIMS, ASE, NCCER
2. KDE is piloting Algebra II end of course assessment with 9 other states
3. Algebra I & Geometry are going online
4. NRT (norm- referenced test) are coming back to KY elementary and middle schools
5. KOSSA – KY Occupational Skill Standards Assessment
6. The ACT will be given to all 11th grade students, 8th graders will take the Explorer test
7. Work Keys is given online
8. World language assessment
9. KyEducators.org is a large online professional development resource for educators. It includes the Ky Principal online test.
10. Jefferson Co. uses proctored testing for it's E-school of online courses & course recovery
11. *The Kentucky Department of Education currently provides unlimited access to the TransACT Compliance & Communication Center to all districts in the state, at no cost to the districts. TransACT is an easy-to-use online service that includes the TransACT NCLB Parent Notifications and GenEd Parent Notifications that will enable your district and schools to communicate professionally and consistently with families, thereby ensuring compliance with the parent notification requirements of NCLB and the Office for Civil Rights. And because the documents*

are available in multiple languages, you can communicate with parents in a language they understand.

12. *Kentucky Instructional Data Systems (KIDS**)** KIDS is a federally-funded business intelligence initiative designed to provide teachers, administrators and other educational leaders access to longitudinal student data so that they can provide optimum educational services to their students. The system will include information from many sources including the student information system, formative and summative assessment systems, instructional resources, district level financial management systems, etc. Analysis capabilities will allow early detection of trends at the student, classroom, school, district or state level. State and federal reporting will be facilitated. The good work and lessons learned from KDE's first generation data warehouse, MAX, are not being discarded but built upon and extended.*

13. *Knowledge Management Portal (KMP) The KMP will simplify and secure access to information for students, parents, teachers, administrators, policymakers, third-party researchers and vendors. It will build upon the capabilities of KIDS and provide advanced web-based features such as on-line collaboration and personalization. KMP will recognize users and display information based on their specific interests and job duties. For example, using the features of a fully developed Knowledge Management Portal, a classroom teacher will analyze the results of a formative assessment, research web-based instructional resources that cover specific classroom topics not mastered by the students, and direct students to appropriate remediation opportunities. Teachers will access instructional resources such as units of study, online collaboration and assessment models.*

Where We Want to Go in the Use of This Application:

1. Formative assessment is missing from the various assessments given in KY
    a. Benchmark's an example – i.e. JCPS computer skills test
    b. Thinklink Predictive Assessment is an example of an online formative assessment KY uses
2. The KEN should include infrastructure to handle virtual processes, including interactive assessment applications. Examples: Science and Industrial processes
3. One issue to take into account is the need for training for non-education state agencies
    a. suggest keeping options open and not require the use of Blackboard as only LMS.

~~4. JCPS requires all software to be "SIFA" certified before they will purchase. http://www.sifinfo.org/~

5. There should be one entry of student info regardless of application – data should come from the student info system. All applications should cut down on teacher workload – repetitive task. Ideally have just one platform or at least a standard that all applicants comply with.

~~6. Online Applications should come with a standardized Tool Kit – ruler, protractor, calculator, etc.~~

7. Common set of attributes:
    a. Student record level data collection and warehousing in a single location with cross agency access
    b. System maintenance and upgrades should be included in the adoption of any application
    c. *The delivery system can tolerate network problems and/or power outages.* Infrastructure with the ability to handle high volume interaction and capture individual student progress on assessments so students can continue the assessment process in the event of system failure. (It is critical to be able to start testing and forward data through the network as testing proceeds. It creates too much of a bottle neck to wait until the assessment is finished and you have several locations sending data at the same time. The current infrastructure necessitates locating the assessment server within the local district for K-12 to maintain performance for high levels of network traffic. This issue would also hinder the desired data warehousing configuration.)
    d. Compliance with SIF standards , see http://www.sifinfo.org/
    e. Rapid reporting of student progress, performance diagnosis and feedback to the student.
    f. Standardized application tool sets, i.e. calculator, spell check, etc. should be capable of administering not only multiple-choice question

g. Ability to handle incorporate audio, video, and virtual processes
h. *Flexible is the delivery system with respect to differences in school-level computer infrastructure*
i. Include items that can be scored in multiple categories, such as essays and other constructed response item types
j. Also should support less common item types such as text formula input, clicking on "hot spots", graphing item types and text entry and drawing solutions. In addition, various tools should be available to assist students in answering items as needed, such as rulers, protractors, calculators, highlighting capability, and drawing tools. Finally, the delivery system should be capable of calling items or performance tasks that contain applets or compiled executables.
k. Items administered for accountability purposes must be developed to measure grade-level standards
l. The delivery system provide sufficient testing accommodations
m. Ability to monitor the progress of all students assigned to a test session via the Session Details. For example, the color-coded words in the Status column after each student's name indicate the student's real-time test status:

How We Are Going to Get There:
Describe existing barriers such as policies, processes or resources associated with the desired use of this application and how these barriers can be removed. Include your current plan to address deficiencies. Recommendations include improvement of processes, refinement of policies and budget requests.

1. Review and consider the life expectancy of applications before finalizing = It will cost us to change in the future whether it is a chosen change or necessity.
2. Bandwidth was an often repeated barrier to desired applications. Not all districts or schools have equal access to bandwidth. The result is reduced functionality during peak assessment or other application periods. The group suggests establishing a minimum bandwidth standard for schools or districts based on student numbers or other criteria.
    a. Although KEN is increasing bandwidth to the district, it does not increase the bandwidth within the district. Moving all state assessments to online delivery should produce a savings to the state from reduced time, postage, travel and printing cost.
    b. At best, the current state of the bandwidth may support electronic versions of traditional assessment methods. However, it is not viewed as being capable of supporting desired audio, video, virtual processes, or high volume data transfer, storage and retrieval.
    c. *Due to the complexity of online testing**,** a coordinated effort by personnel who work with testing, technical and training support and management is required.*
3. Formative assessment: A technique to be considered by the district is an online assessment center where teachers can learn to judge various forms of student work and ask colleagues for opinions and advice about assessing their own students' work.

Impact on Teaching and Learning:
Describe how the implementation of these recommendations can have impact on teaching and learning from the statewide perspective with measurable outcomes.

1. Students seem to be able to maintain better focus and completion rates on assessments given electronically, provided they are comfortable with the technology.
2. Written assessments completed electronically are of better quality and easier to score than hand written responses.
3. Teachers will need additional training to monitor and assist students during the testing process. This will be necessary to assure testing procedure compliance and to help resolve technical issues that may arise during the testing process.
4. *Many testing accommodations, such as large print and audio administration, may be easier implement by computer. Other accommodations, such as screen readers, text-to-speech*

conversion programs, or special input devices, may be more difficult to provide. In general, a delivery should be capable of implementing a variety of testing accommodations, provided that the accommodated students are given the opportunity to familiarize themselves with the computer environment.

5. *Immediate score reporting/rapid reporting to schools*
6. *Decreased administrative burdens on school district personnel*
7. *More flexible test scheduling*
8. *Improvements in test security through encryption and other procedures*
9. *Increased security of testing material. The test delivery system should be secure on multiple levels. The security of test items should be maintained through encryption routines, and transmissions of data between a central server and computers in the schools should be monitored and logged. In this manner, full audit and acknowledgement tracking accompany data transmissions. Access to the system at the schools should be secure and password protected. In addition, sessions should be proctored and access to content should be possible only by authorized personnel and only during testing windows. As part of the administration, desktop access should be frozen so that it is not possible for students to access the internet or other desktop tools that might aid them.*
10. *Improvements in the state and local management of the testing program — It is time-consuming and laborious to monitor, distribute, collect and store large volumes of pencil-and-paper tests. Once in place, an online testing program eliminates many of these logistical issues.*
11. *Alternative forms of tests for disabled students and other student populations — Online testing can improve the way that disabled students receive and respond to test questions. Online testing also can be modified to meet the needs of English as a Second Language students and students with unique test-taking needs.*

Others include:
_improved Internet access for teachers;
_ greater ability to share instructional resources;
_ opportunities to integrate technology into instruction; and
_ increased communication among colleagues.

Formative Assessment
Teachers need to know about their pupils' progress and difficulties with learning so that they can adapt their own work to meet pupils' needs -- needs that are often unpredictable and that vary from one pupil to another. Teachers can find out what they need to know in a variety of ways, including observation and discussion in the classroom and the reading of pupils' written work.

The basic idea of online assessment is that test items are selected by the computer to individually match the ability level of each student. In this manner, the test is tailored to each student.

Should the algorithm allow for item review?
One controversial question related to the administration of online assessment has to do with whether students should be permitted to review and change items that they answered previously. Early researchers working in adaptive testing argued that allowing students to go back and change previous answers would negatively affect the measurement efficiency of the online assessment: if an answer was changed, the items following in the sequence selected by the computer would no longer be the best ones. Some researchers also warned that students could use trickery to improve their scores by purposefully answering questions incorrectly so the computer would give the easiest questions possible, and then changing their answers to correct the very end of the test. For these reasons, a number of operational online assessment programs do not allow students to review previous responses. However, recent research has found that allowing students to review and revise answers in online assessment does not appreciably affect measurement efficiency, and strategies to obtain higher scores by trickery are extremely unlikely to benefit students.

How to evaluate the program?